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Researcher Sounds Fraud Alarm—and Loses NIMH Grant

In the last issue, SGR reported on the languid three-year investigation of a case of scientific fraud involving research supported by the National Institute of Mental Health (NIMH). The preliminary finding of a five-member investigating panel was that the accused, a psychologist named Stephen E. Breuning, "has engaged in serious scientific misconduct." He did so, stated the panel, by fabricating data of non-existent clinical trials of behavior-control drugs on severely retarded, institutionalized patients. Now for an update:

• The *accuser* in the case has lost his NIMH grant—after 18 years of continuous support. That's the word that went out last month to whistleblower Robert L.

Sprague of the University of Illinois, who relentlessly needed a reluctant NIMH into investigating Breuning's research data. By letter dated March 3, Sprague was notified that his application for continued research support by NIMH, though rated high and "unanimously recommended for approval" by peer reviewers, has been "deferred"—which means turned down but eligible for resubmission. Out of funds as of March 31, Sprague has laid off his staff and closed down his research program, which he describes as the only one he knows of in the US that's looking into a particularly common and serious side effect of behavior-control drugs on retarded patients.

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Fat Pay for NSF Specialists Draws Attention on Capitol Hill

Little known to the general public, and lightly used—even by the federal agencies it was created to help—the Intergovernmental Personnel Act (IPA) of 1970 got a rare bit of notice recently. It happened when the Senate's voice of frugality, William Proxmire (D-Wis.), curiously confronted the hearty use of this obscure legislation by the Cinderella of competitiveness, the National Science Foundation.

NSF is using the IPA to hire some staff members at salaries considerably above the agency's top salary, the \$89,500 paid to Director Erich Bloch, the same amount Congressmen and Senators receive. Asked by Proxmire about a salary of \$108,000, plus \$26,611 in benefits, paid to E. M. Sparrow, on leave from the University of Minnesota as Acting Director of NSF's Chemical, Biochemical, and Thermal Engineering Division, Bloch goodnaturedly replied: "I come cheap."

The merit of the IPA is that it permits federal agencies to elude clamped-down federal pay scales and hire expensive talent at their going wage. The difficulty is that federal pay is a politically sensitive issue that regularly stirs Congressional grandstanding. Following the recent federal pay rise, several Congressmen, though personally hardpressed financially, publicly committed their raises to charity.

The IPA legislation provides a way around the federal pay lid by permitting agencies to take on specialists for up to four years at whatever pay they were receiving in their regular jobs. The cost of salary and benefits can be

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In Brief

A caustic testimonial to the mobilization powers of the biomedical lobby was expressed March 10 by Senator Lawton Chiles (D-Fla.), new Chairman of the Appropriations Subcommittee for NIH. Referring to the failed White House effort to clip \$334 million from this year's NIH budget, Chiles said the cut-back attempt "has resulted in more phone calls, letters, visits and meetings so far this year than any other issue in the entire subcommittee."

Leading the fight for the NIH budget was the Ad Hoc Group for Medical Research Funding, a floating alliance of some 140 professional associations and health lobbies, with headquarters at the Association of American Medical Colleges, Washington-based lobby for medical education and research.

Animosity continues to grow between Irwin Feerst, the insurgent candidate who came within 242 votes last year (SGR Vol. XVI, No. 20) of winning the presidency of the Institute of Electrical and Electronic Engineers and the IEEE brass. Feerst, claiming the IEEE fails to represent America's rank-and-file engineers, has protested a session on "Offshore Opportunities to Reduce Costs and Expand Markets Internationally," planned for IEEE's ELECTRO '87 in New York, April 7-9. "We will not permit this session to take place," Feerst wrote to IEEE President Henry L. Bachman. Reply: "your letter goes well beyond your usual strident dissent and demagogic negativism and appears to threaten physical violence." Bachman said a disruption would bring "criminal prosecution," but failed to address Feerst's charge that IEEE is helping to export engineering jobs.

... NIMH Reviewers Strongly Endorsed Sprague's Project

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• Though the draft investigative report, delivered to NIMH early in January, expresses concern about dosage of patients being based on Breuning's falsified data, NIMH has done nothing to bring these concerns to the attention of institutions relying on Breuning's publications. It says that it is still awaiting comments on the draft report, that further review will follow their receipt, and that a final report isn't expected until mid-May. NIMH officials contend that they have no ethical responsibility to advise the caretakers of retarded patients of the damning contents of the draft report prepared by a panel of experts appointed by NIMH.

Sprague, the now-grantless whistleblower, is Director of the University of Illinois (Urbana-Champaign) Institute for Child Behavior and Development. He applied to NIMH last November for a four-year grant, averaging about \$140,000 a year, to continue his longrunning controlled studies of the development of Tardive Dyskinesia, a Parkinson's-like disorder, in patients on neuroleptic medication. The NIMH peer review panel gave his application a rating of 150—well within the 140-170 range that usually, though not always, wins support.

The review panel questioned some minor procedural items in Sprague's application, and ended up by recommending two years of support rather than the requested four years. But it was also unusually lavish with praise for the scientific significance of the project, the methodology to be employed, and Sprague's competence for carrying it out.

Thus, the review of the application states that "the subject of this work is important, and the ongoing project is strong in aspects of data collection, training methodology and delivery, monitoring technology and implementation, and psychometric technology." It noted, too, that "Despite the high incidence of TD (Tardive Dyskinesia) among the mentally retarded there have been few methodologically sound studies of this problem." The review proceeded to state that Sprague's "contributions to the field of psychopharmacology in MR (mentally retarded) populations, his productive efforts in earlier stages of this work, and his longterm commitment to patient care render him eminently qualified to conduct this study."

The review, with a unanimous recommendation for two years' support, was conducted last November by a seven-member panel of university psychologists and psychiatrists. On February 10, the report of the panel was taken up by the National Advisory Mental

Health Council, traditionally a rubberstamp body that abides by NIMH staff recommendations in fulfilling its statutory role of approving awards after they've been screened by expert reviewers.

With his heretofore routinely renewed grant due to expire on March 31, Sprague received notice by mail on March 6 that the Advisory Council had "recommended deferral of your application." The notification was signed by Eleanor C. Friedenberg, Deputy Director of the NIMH Division of Extramural Activities. It stated that the Council noted "several concerns and questions raised by the IRG" (initial review group), and added that "The Council was unable to reconcile the IRG's comments with the priority score, and thus recommended rereview."

The NIMH letter to Sprague stated that "you may submit clarifying information . . . if you wish. The IRG will then reconsider the application along with the clarifying information. This is not an opportunity, however, to revise the application." The earliest date for a re-review, Sprague was informed, was May 18-20, six weeks after his current grant expired.

The NIMH letter conveying this information was dated March 3, 1987. It advised Sprague, that "should you choose to revise the application and resubmit it, the deadline receipt dates are: 'March 1 (sic), July 1, and November 1.'" Friedenberg's letter did not specify the "several concerns and questions" that it said inspired the deferral. According to persons familiar with NIMH operations, a deferral is extremely unusual in the combined circumstances of a relatively high priority score for an ongoing project led by a recognized authority in an underpopulated field of research that's considered important.

Facing a cutoff of funds after March 31, and with no chance to appeal before that date, Sprague last month gave dismissal notices to a secretary, a computer programmer, and three graduate student assistants, and has notified a collaborator at a hospital in Minnesota that he is out of funds to continue in their joint project.

Sprague offers no speculations on why NIMH suddenly cut off his research funding—after 18 uninterrupted years. But one view of the matter is that NIMH senior brass got him for holding their feet to the fire on the embarrassing Breuning case. The panel that investigated Breuning lightly admonished Sprague for not having supervised him more closely on a collaborative project—when Sprague was at Illinois and Breuning at the University of Pittsburgh. But it also commended Sprague "for bringing to the

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... No Need to Notify Institutions, NIMH Officials Say

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attention of NIMH his concerns about Dr. Breuning's work and his continued cooperation with NIMH in investigating those concerns."

Meanwhile, NIMH officials insist that at this stage of the investigation into Breuning's claimed research findings, they have no responsibility to advise institutions for the retarded about the emphatic conclusions of faked data. The panel that conducted the investigation for NIMH strongly emphasized that a great deal of drug prescribing for institutionalized retarded patients was based on data that it said Breuning had faked.

The report of the investigating panel states: "Dr. Breuning made a strong impression on the mental-retardation field . . . In only a few years, Dr. Breuning achieved major standing and became one of the most frequently quoted workers in this field . . . There can be no question that states (e.g., Connecticut) have amended policies governing treatment practices in an effort to be consistent with what Dr. Breuning reports as scientific findings in his public addresses."

The investigative report continues: "Thus, on the basis of his publications, Dr. Breuning has achieved the status of a major worker in the field of mental retardation. His reported work has had a significant impact on (a) the knowledge base of this field, and (b) social policies concerning the care and treatment of the mentally retarded. Questions about that work, therefore, have very serious implications for both." Those words, delivered to NIMH in January, were written by a five-member panel of senior psychiatrists and psychologists, chaired by Arnold J. Friedhoff, MD, Professor of Psychiatry, NYU School of Medicine.

Out in Rockville, Md., where the NIMH staff is headquartered, the provocative words of the investigating panel have been easily taken in bureaucratic stride.

SGR spoke last week with the official who bears the title of NIMH Policy Officer for Ethics in Science, Wright Williamson. Was there not justification for notifying institutions for the retarded that the report, though still under review and subject to revision, had raised serious questions about Breuning's influential research?

Williamson responded that there was "no procedure for that." He stressed that NIMH was awaiting comments from the parties involved, including Breuning, who denies the charges (see SGR Vol. XVII, No. 5).

A similar, but elaborate response to the same question, was provided by Lorraine Torres, Director of the NIMH Division of External Activities, where Sprague's grant was administered. Asked about notifying institutions for the retarded, Torres said, "We can't do anything until the final report is in," which is expected to be in mid-May. Wouldn't it be ethical to advise institutions of the panel's conclusion, with appropriate stress on the distance still to be traveled in the review process? No, it wouldn't, Torres said, adding that concerns about inappropriate medications based on Breuning's research were misguided. "There's a considerable distance between an initial report and medical prescribing," she said. Referred to the investigating panel's statements about Breuning's influence on care of the retarded, Torres remained adamant that NIMH has no responsibility to alert anyone to the panel's findings at this time.—DSG

... Grant Sent to University, Which Sends it Back IPA Appointee

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shared with the home organization, or the federal agency can pay all of it—even if it's far above the federal pay level.

But the risk is there for sore relations when a sought-after specialist is taken into a federal agency on an IPA salary that generously exceeds the pay of regulars who have long been doing similar work as career civil servants. That may be the reason why with nearly 2 million persons in federal civilian jobs, only 1200 are in IPA status. (The legislation also provides for federal employees to be detailed to non-federal organizations, which accounts for another 600 or so IPAs, most of them specialists on loan to local government agencies that usually pay most or all of their salaries.)

NSF, which relies on a constant supply of "rotators" from research laboratories to fill out its professional

ranks, has 53 IPAs on its rolls. The surprise that's being voiced around Washington—the story got a big splash in the *Washington Post* on March 25—is about some of the hefty salaries and benefits being received by NSF's IPAs. The remuneration "packages" consist of NSF money awarded as grants to the home institution, which then pays it back to the on-leave IPA at NSF headquarters in Washington. The amounts, according to NSF officials, simply match what the borrowed specialist was receiving at home.

Since federal salaries carry retirement and health benefits ranging from 15 to 20 percent, the compensation provided for the IPAs isn't as far above federal scales as may appear at first glance. But with the NSF capped at the Director's \$89,500, the IPA levels are a bit striking.

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Social Needs Should Come Ahead of R&D, House Report Says

The big budget increases that the Administration is seeking for the space agency and the National Science Foundation have aroused a warning from the House Appropriations Committee in its mid-season "Views and Estimates" of the presidential budget request for fiscal 1988.

Noting "serious shortfalls . . . for assisted housing, the homeless, environmental programs, and veterans medical care," the annual report—required under the Budget Act of 1974—states: "While the Committee strongly supports generous funding for NASA and the NSF, if sufficient allocation cannot be made available to cover the above 'shortfalls,' it would place a higher priority on these activities, and would recommend that funding for NASA and the NSF be held to a smaller increase than the levels proposed in the budget."

Referring to NSF, whose 17-percent budget-request increase has been linked by the White House to industrial competitiveness, the Appropriations report "notes that not all of the substantial increase is

targeted to areas that could demonstrate a direct 'competitive' payoff."

The report reflects the dialog that took place March 3 and 4, when NSF officials testified before the House Appropriations Subcommittee on Housing and Urban Development and Independent Agencies. Chaired by battlewise Edward P. Boland (D-Mass.), now in his 34th year in Congress, the Subcommittee has jurisdiction over the very agencies that the Views and Estimates report pits against each other for budgetary favor. Boland has long performed as a stern but devoted supporter of NSF, and a skeptical but politically undergunned critic of the heavily-lobbied space program.

During the NSF hearing, he sparred with NSF Director Bloch, who insisted that everything NSF does sooner or later adds to America's competitive prowess. Boland didn't appear persuaded, as is evident from the doubts and warnings expressed in the Appropriations Committee's report.

IPAs

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Thus, the official figures list total compensation of \$118,298 for Nam P. Suh, who came from MIT on an IPA arrangement to head the NSF Engineering Directorate. And it's \$103,690 for William J. Merrell Jr., on leave from Texas A&M, who heads Astronomical, Atmospheric, Earth and Ocean Sciences.

Compensation totaling \$122,839 is listed for T. Kenneth Gustafson, from UC Berkeley, who's serving as NSF program director for lightwave technology. A breakdown of this figure includes \$5000 for passed-up consulting income. For Michael J. Wozny, on leave from Rensselaer Polytechnic Institute to head one of NSF's computer programs, compensation totals \$127,651.

Margaret L. Windus, Director of NSF's Division of Personnel and Management, told SGR that until 1984, NSF was under an erroneous impression that it was limited to 22 staff members in IPA status. She said that was because NSF had misinterpreted regulations from the Office of Personnel Management, which sets the rules for all Executive Branch agencies. By accident, Windus said, NSF found that its allowed ceiling for IPAs is 57 among a staff of regular employees of about 1000.

Windus says that all of NSF's IPA appointments are routinely reported to the Office of Personnel Management. But when SGR checked there for a list of the 53 that NSF says are now on duty, we were told by OPM's Jim Jones, who's responsible for keeping track of IPA

appointments, that he currently has "only four submissions from NSF."

The IPA program is obviously a highly sensitive little corner of the federal establishment—for the simple reason that it involves substantial pay differences for people doing the same work. NSF officials, ordinarily forthcoming in their dealings with the press, were a bit agitated by questions about IPAs, and made several references to instructions they had been given by the NSF General Counsel.

Along with several other federal agencies, the National Institutes of Health has quite a few IPAs on board, 54 as of this month. But NIH officials tell SGR that all of their IPAs come on a 50-50 cost-sharing basis with their home institutions. The top compensation is \$132,000, with only three of the 54 at NIH above \$100,000.—DSG

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Editor and Publisher

Daniel S. Greenberg

Associate Publisher

Wanda J. Reif

European Correspondent

Francois Seguler (Paris)

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Space Station: Pact Near on International Partnership

London. For three years the center of erratic negotiations, the US space station program now seems on the way to acquiring the foreign partners it needs to pay the costs and boost its credibility in an increasingly skeptical Congress. An agreement by the end of the summer is expected, with a total price tag of \$20 billion for putting a manned base into orbit by the mid-1990s.

The negotiations, involving the US, Canada, Japan, and the 13-nation European Space Agency (ESA), have been held together by the realization that the various parties can benefit from cooperation in this venture, even though their interests differ widely and levels of trust are not especially high.

The space talks began in early 1984 shortly after President Reagan, in his State of the Union address, committed the US to the project. Even today, details of the manned station are extremely sketchy, but back then, they were close to non-existent. Nonetheless, the project rode to the White House on the recognition that NASA would sink into bureaucratic oblivion without a new extravaganza and the work it would provide for inhouse staff and hungry contractors.

From the outset, Washington expressed interest in an international dimension, but not out of a desire for brotherhood or respect for foreign technological skills. Rather, the US wanted other countries to share the immense costs, which were then estimated at \$8 billion for the US, plus whatever the foreign partners would provide for special labs and other equipment. In addition, NASA's political strategists felt that if foreign partners were deeply engaged in the project, it would be more salable to Congress and more difficult to kill or shrink when the cost estimates were revealed to be absurdly unrealistic. Apparently ahead of schedule, that's already happened: NASA is now telling Congress that the price for the US may be as high as \$16 billion.

The American money would finance the development of a main core for the structure, including solar-power hardware, life-support systems, and cabins for up to eight crew members, together with a laboratory for scientific experiments in low-gravity materials processing and other space-borne research.

Under plans that have been developing for interna-
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Restored to Chairmanship, Proxmire Gives NSF Rare Scrutiny

Back as an appropriations chairman after six years of Republican control of the Senate, William Proxmire (D-Wisc.) is performing in his customary role of penny-watching guardian of the federal purse—thus subjecting the current NSF management to unaccustomed scrutiny. But with droves of legislators seeking the Foundation's favor, there's little chance of Proxmire carrying his subcommittee with him. Nonetheless, the show is entertaining, especially since Proxmire's staff knows the ways of NSF.

With NSF Director Erich Bloch in the witness chair on March 12, Proxmire warmly exclaimed, "Welcome. You can see that this is going to be a receptive, cooperative, and supportive committee where we can be. We will give you anything but money."

Proxmire then inched through the NSF budget, which Bloch repeatedly described as insufficient to support all the scientifically worthy, economically important claims on the Foundation's resources. Why, then, asked Proxmire, is NSF providing \$270,000 for a study of "flow through coronary blood vessels," when the National Heart Institute has a budget of \$930 million?

Nam P. Suh, NSF's Director of Engineering, replied that the project involved "fundamental engineering principles," and assured Proxmire that NSF and NIH projects were closely coordinated. David P. Kingsbury, NSF Director of Biological, Behavioral, and Social Sciences, piped in that "we check everything through an

NIH computer system."

"We will see how good the system is," Proxmire replied.

Referring to a \$10,000 award for a dissertation "on the bullfight in Spain as a cultural manifestation of the national character," Proxmire said, "I'm afraid the average taxpayer wouldn't want to direct his hard-earned dollars to that kind of bull," and suggested that Hemingway had said it all, anyway.

Parting from the rule of don't talk back to your appropriations chairman, Kingsbury gutsily defended the bull-fighting study: "Speaking for faculty members at universities around the country, it is very unusual for a faculty member to have a student do something that is not a new and unique experience."

Whereupon Senator Pete Domenici, of New Mexico, an NSF subcommittee member who is also ranking Republican on the Budget Committee, arrived late to introduce a note of political reality: "I understand that the Chairman has been somewhat concerned about your increased budget," Domenici said. "I want to state, from my standpoint, I am going to do everything in my power in the budget process to significantly increase the portion of the budget going to NSF."

Domenici then got down to business, telling Bloch that he wanted to see more spending on The Very Large Base Array radio telescope that NSF is financing in New Mexico.

... US Technology Restrictions Arouse Foreign Concern

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tional collaboration, Japan and the ESA countries are each to provide an additional laboratory, to be welded onto the main US "spine." Canada would contribute robotic equipment for maintenance and handling satellites retrieved for repairs.

The foreign contributions are roughly estimated at \$2 billion for ESA, \$1.5 billion for Japan, and \$500 million for Canada. The parts of the station would go up aboard shuttle flights in the early 1990s, assuming that the shuttle fleet is restored to service.

It's the Europeans, with their special demands, who have created the most difficulties for the American quest for foreign partners. European negotiators insisted, for example, that ESA transport its people and cargo aboard its own launch vehicles, in particular *Hermes*, a small-scale space shuttle for which development is scheduled to start next year. ESA also insisted on the right to choose the type of experiments to be conducted inside its own laboratory, to be called *Columbus*.

Underlying all these demands was six years of experience with the Reagan Administration's high-handed tactics on technology controls—an extremely sore issue in European high-tech circles. Europe's aim was to benefit from the American-dominated space station while still working toward greater autonomy in space capabilities.

The demand to write the research program for the

Columbus laboratory arose from fears that if NASA controlled the program, *Columbus* might be excluded from research that seems to hold the greatest potential for commercial payoff, particularly materials processing. Also to be settled is the question of which country's patent laws will be applicable to inventions on the base. Then, too, moving from science fiction to the brink of plausible occurrence, is the issue of jurisdiction over criminal offenses committed in orbit.

With these issues still unsettled, another barrier to agreement rose up around Christmas when the Pentagon departed from its previous stance of no interest in the space station or the discussions, which had been handled till then by NASA and the State Department. At the behest of Defense, the US then declared its intention to reserve the right to use the station for unspecified military experiments.

US officials have told Congress that they do not plan to deploy weapons aboard the space station. But according to a West German official who has been close to the negotiations, the draft agreement put forward by the US does not exclude this application.

Throughout the discussions, all the parties have accepted that the base would see some military use, not only by the US, but also by the other participants. The British Defense Ministry has already thought of a number of experiments involving earth observation. What is

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Graham Dismisses Academy Members' Opposition to SDI

"What is your estimate of the capabilities of the people who are members of the National Academy of Sciences?" Senator William Proxmire asked White House Science Adviser William R. Graham on March 13 when the budget for Graham's office was before the Senator's appropriations subcommittee. "Do you think they are able people and competent people?" the Senator added.

Graham, who shuns the press and appears uncomfortable at command public appearances such as Congressional hearings, cautiously replied: "I believe that to the degree they can be described as a group, they are each skilled in some area of science or engineering."

Proxmire responded, "They are the elite, they are the most distinguished." And the Senator then made clear what he was driving at: The negative attitude toward Star Wars that a recent survey found among NAS members. What do you think about that? he asked Graham, who is not an Academy member.

Graham countered that the survey "asked the scientists to assume something implicitly and then give an explicit answer," and, he continued, the respondents

were "from a variety of disciplines but not the disciplines which would be the majority of the ones on the line for designing and developing the system."

Proxmire asked, "You don't think physicists and mathematicians are in a position to make this evaluation?"

"I think that the work will actually be done more by industry than by academic [institutions] and the Academy is more from the academic sphere than industry," Graham replied, and Proxmire dropped the subject.

Proxmire also asked Graham about foreign cost-sharing in the Superconducting Super Collider—something that the Department of Energy keeps claiming is on the way, though it never shows up. "Do you have any commitment?" the Senator inquired.

Graham replied: "Not today, Senator. We are just beginning with the process of formal discussions with countries around the world. However, we do have several statements of strong interest in participating in that, in the construction as well as in the operational and scientific phase."

... Europe Gags on US Demand to Control Space Station

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worrying other nations, however, is that the US might use the structure not for operational weapons but for classified experiments related to the Strategic Defense Initiative and other controversial programs. One British official stated, "I am concerned at the prospect of men in uniform taking over a big chunk of the base and putting barbed wire around it."

As the negotiations have proceeded in recent weeks, the foreigners, particularly the Europeans, have been pressing the US to agree that all the participants should have a say in managing activities on the station. This management role, they argue, should encompass some control over not only military activities but also over what kind of experiments take place in each of the three laboratories attached to the station.

One possibility under this plan would be for the US, Japan, and ESA to be free to do more or less as they liked inside their own laboratories, with overall policy decisions entrusted to a broadly based council of management in which all the participating nations are represented.

The US, however, is insisting that it alone should have control over what goes on inside the station. This is justified, the Americans contend, by the fact that the US is, by far, the largest financial contributor to the project. The Pentagon insists on excluding any provision that would allow foreigners to veto military activities.

Can an agreement be worked out amid these frictions? It seems likely that there will be some movement during talks scheduled for this month. The US still appears to be anxious for foreign partners, especially with Congress increasingly concerned about the costs and showing irritation over the estimates doubling from the \$8 billion that NASA talked about last year.

As for Europe, Japan, and Canada, they value the technological prowess that the US would bring to the venture. They may finally decide that a relatively overt military involvement in the space station may not be too high a price to pay for the technology they may be able to acquire as partners. But they recognize, too, that letting the Pentagon come aboard could inflict some casualties on the European space alliance. There have been hints that neutralist members of ESA—Austria, Sweden, and Switzerland—may drop out of the project if fears of military involvement are not assuaged.

Many signs suggest that the negotiations will lead to an accommodation over the next few months. Agreement on the details is required to cement the contributions of the various nations and also for contractors to start on full-scale design work by the end of the year, as scheduled.

The main threats to an accord are continued US insistence on control of the space station and the degree of freedom for military activities. An unyielding US stance on those crucial items could make it difficult, perhaps impossible, for foreign participants to deal with their own home politics.

In European space circles, it's being said that if the space-station talks founder, the shock waves could extend to other big high-tech projects for which the US is seeking foreign partners, including the Superconducting Super Collider.

Meanwhile, some European space officials have been quietly discussing a pan-European space station, built around Columbus, and totally autonomous of US participation.—Peter Marsh

(The author is technology correspondent of the Financial Times, of London.)

In Print

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Science and Technology in the Sunbelt: Federal Policy, Jobs, and Competitiveness—A Fact Book (27 pages), a compilation of statistics, with accompanying comments, on distribution of federal R&D funds, correlated with population, local R&D spending, etc., all tied to the theme of R&D as a promoter of economic growth and the generally low ranking of most sunbelt states in federal R&D receipts. Prepared by the Sunbelt Institute, of Washington, DC, and the Southern Technology Council, a consortium based at the North Carolina Research Triangle, this report reflects the increasingly vigorous theme of regionalism in national R&D politics.

\$4.00 per copy; Southern Technology Council, PO Box 12293, Research Triangle Park, NC 27709; tel. 919/941-5145.

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National Aeronautical R&D Goals: Agenda for Achievement (12 pages), a quick and thin report by the government-industry-academic Aeronautical Policy Review Committee created by the White House to counter foreign inroads on US supremacy in commercial aviation. Its first report, issued in 1985, urged the US to adopt a "national aeronautics strategy" for subsonic, supersonic, and transatmospheric craft. The new report urges adoption of an eight-point agenda of federal-private R&D collaboration, and warns that the "depth of foreign aeronautical resolve and the concerted national effort required to preserve American competitiveness are still largely underestimated." Having warned of the foreign aerial threat, the report takes a chimerical turn by advising the American aircraft industry to learn "how to work effectively with foreign partners while preserving technological leadership."

Single copies available without charge from the Office of Science and Technology Policy, Executive Office of the President, Washington, DC 20506; tel. 202/395-5101.

Humanities Doctorates in the United States: 1985 Profile (73 pages) and **Humanists on the Move: Employment Patterns for Humanities PhDs** (69 pages), reports prepared by the degree surveyors at the National Academy of Sciences, with support from the National Endowment for the Humanities, provide data on fields of study, employment patterns, income, and various trends. Among the major findings: unemployment among the nation's 85,200 humanities doctorates (1983 count) was a "very low" 1.7 percent, but "out-of-field" employment stood at 20 percent, and was higher among PhDs under age 44, which "suggests at least a temporary oversupply of humanities personnel."

Both reports available without charge from the National Academy of Sciences, Room JH634, 2101 Constitution Ave. NW, Washington, DC 20418; tel. 202/334-3152.

New Developments in Biotechnology: Ownership of Human Tissues and Cells (168 pages), first of a series of reports from a long-running major study by the Congressional Office of Technology Assessment, notes that commercial use of human-body materials "raises many legal, ethical and economic issues" for which "There are no easy answers. These issues are novel and complex, and no single body of law, policy, or ethics applies directly." The OTA report adds that "regardless of the merit of claims by the different interested parties, resolving the current uncertainty [concerning use of human materials for therapy, research, and commerce] may be more important to the future of biotechnology than resolving it in any particular way."

Congressional interest in this subject is keen, as reflected in welcoming comments on the report by Senators Edward Kennedy (D-Mass.) Albert Gore (D-Tenn.)—both veterans of Congressional grappling with biomedical ethics issues—and Rep. Robert Roe (D-NJ), the forceful new chairman of the House Science, Space, and Technology Committee.

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Graduate Education and Career Directions in Science, Engineering and Public Policy (168 pages), report of a survey by the American Association for the Advancement of Science, supported by NSF, of 21 graduate programs and ensuing employment, concludes that this sliver of academe is "on the whole reasonably healthy," and that it continues "to attract students who go on to pursue rewarding careers for which they were trained." The main sour note is that faculty in science, engineering, and public policy programs, "like others in interdisciplinary fields, frequently complain that their colleagues in traditional academic disciplines do not fully appreciate the value of their efforts."

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